AMENDMENTS TO THE CLAIMS

Prior to the present communication, claims 85-89, 91-94 96-103 were pending in the subject application. Claims 85, 94, and 103 have been amended herein, while claims 101 and 102 have been canceled, and dependent claim 104 has been added. Accordingly, claims 85-89, 91-94, 96-100, 103, and 104 will remain pending. All claims currently pending and under consideration in the present application are shown below. This listing of claims will replace all prior versions, and listings, of claims in the application and is presented here for convenience of the Examiner:

Listing of Claims:

1. – 84. (Canceled)

85. (Currently Amended) One or more computer storage media having computer-executable instructions embodied thereon that, when executed, perform a method for processing hereditary data related to the use of clinical agents by a person, the method comprising the steps of:

displaying a graphical user interface (GUI) that is configured to solicit input from a clinician to ascertain whether to authorize performing a genetic test on ~~a~~ the person when a genetic test result is unavailable for the person;

when demographic information about the person is accessible, performing the steps comprising:

(a) ~~utilizing the demographic information of the person for~~ calculating a first likelihood that the person displays genetic variability

linked with genes associated with the genetic test as a function of the demographic information of the person; and

(b) displaying a notification window in the GUI that solicits authorization from the clinician to carry out the genetic test, wherein the notification window presents an indication of the first likelihood that the person displays genetic variability linked with genes;

when the demographic information about the person is inaccessible, performing the steps comprising:

(a) ~~utilizing genetic variability of a general population for~~ calculating a second likelihood that the person displays genetic variability linked with genes associated with the genetic test as a function of genetic variability of a general population; and

(b) displaying the notification window in the GUI that solicits authorization from the clinician to carry out the genetic test, wherein the notification window presents an indication of the second likelihood that the person displays genetic variability linked with genes; and

when the genetic test result is determined upon conducting the genetic test, using the genetic test result to identify one or more risk-associated agents via a process comprising:

(a) querying a computerized table listing polymorphism values with the genetic test result to identify associated polymorphism values;

(b) when the genetic test result is associated with a polymorphism value related to an atypical clinical event, accessing a list of risk-

associated agents that cause the atypical clinical event in a person expressing the polymorphism value; and

(c) outputting the list of risk-associated agents and automatically ordering follow-up tests.

86. (Previously Presented) The computer storage media of claim 85, further comprising the step of determining if the person has been exposed to an agent on the list of risk-associated agents.

87. (Previously Presented) The computer storage media of claim 86, wherein the step of determining if the person has been exposed includes accessing an electronic medical record of the person, wherein demographic information and the electronic medical record are accessible and updatable by a healthcare system.

88. (Previously Presented) The computer storage media of claim 87, wherein the electronic medical record is stored within a comprehensive healthcare system.

89. (Previously Presented) The computer storage media of claim 86, further comprising the step of initiating a clinical action if the person has been exposed to an agent on the list of risk-associated agents.

90. (Canceled).

91. (Previously Presented) A computer-implemented method for processing hereditary data related to the use of clinical agents by a person, comprising the steps of:

receiving a genetic test result value for the person;

querying a computerized table listing with the genetic test result value, wherein the computerized table listing includes polymorphism values and atypical clinical events associated with the polymorphism values, and wherein the computerized table is stored on a processing unit;

utilizing the processing unit to determine whether the genetic test result value indicates a polymorphism value associated with an atypical clinical event, and, if so, accessing a list of risk-associated agents that cause the atypical clinical event in a person expressing the polymorphism value;

outputting a representation at a graphical user interface (GUI) of the genetic test result value and the list of risk-associated agents;

when the person has been exposed to one or more of agents on the list of risk-associated agents, automatically ascertaining whether to generate a low-risk clinical response or a high-risk clinical response based on whether a dosage of the one or more agents exceeds a predetermined dangerous level;

when the person has been exposed to a dosage of the one or more agents on the list of risk-associated agents that is above the predetermined dangerous level, automatically generating the high-risk clinical response that includes performing the actions comprising:

(a) reducing the dosage of the agent to an amount below the predetermined dangerous level; and

(b) placing an alternative order for an agent that is absent from the list of risk-associated agents; and

otherwise, automatically generating the low-risk clinical response that includes performing the actions comprising:

(a) adding a comment to the person's electronic medical record indicating that no risks were determined from the genetic test result value; and

(b) outputting an interpretation at the GUI of the low-risk clinical response, wherein the interpretation indicates the genetic test result value is not associated with any know risks.

92. (Previously Presented) The method of claim 91, further comprising the steps of:

accessing the person's demographic information stored in the electronic medical record;

utilizing the demographic information in cooperation with the computerized table listing to determine a likelihood of a genetic variation existing in the person and a severity of an atypical event associated with the genetic variation; and

displaying the GUI based on determined likelihood and severity.

93. (Previously Presented) The method of claim 91, further comprising the steps of:

determining that the person has not had a genetic test performed; and

producing a warning to the clinician to suspend use of the clinical agents on the person pending results from the genetic test.

94. (Currently Amended) A computer-readable medium containing instructions for controlling a computer system for displaying a warning that a clinical agent received from a clinician should not be administered to a person by a method comprising:

receiving from a clinician clinical agent information, the clinical agent information including an identifier of a specific clinical agent;

determining ~~if~~ whether a gene is associated with the clinical agent by comparing the identifier of the clinical agent received from the clinician ~~to~~ against a first data set containing agent-gene association;

when a gene is associated with the clinical agent, attempting to obtain a genetic test result value for the associated gene of the person by accessing patient information within an electronic medical record (EMR) of the person, wherein the EMR is stored within a comprehensive healthcare system;

when the genetic test result value is obtained from the EMR, comparing the genetic test result value to a second data set containing one or more polymorphism values associated with one or more atypical clinical events for the clinical agent;

determining whether the genetic test result value correlates to one or more of the one or more polymorphism values contained in the second data;

when the genetic test result value correlates to one or more of the one or more polymorphism values, displaying a warning to the clinician that the clinical agent received from the clinician should not be administered;

when the genetic test result value cannot be obtained from the EMR, calculating the likelihood that the person displays a genetic mutation linked to the

gene associated with the clinical agent, wherein calculating the likelihood of the linked genetic mutation comprises:

(a) when demographic information about the patient is available in the EMR, ~~using the demographic information to determine~~ determining genetic variability of the gene within the person as a function of the demographic information and basing the genetic-mutation likelihood upon the determined genetic variability; and

(b) when demographic information about the patient is unavailable from the EMR, basing the genetic-mutation likelihood upon the genetic variability of the gene within the general population; and

constructing a message to communicate the calculated likelihood of the genetic mutation and any atypical clinical events that are associated therewith, wherein the message is utilized by the clinician to ascertain whether to order a test to obtain the genetic test result value.

95. (Canceled).

96. (Previously Presented) The computer-readable medium of claim 94, wherein the clinical agent information is received over a communication network from a remote computer.

97. (Previously Presented) The computer-readable medium of claim 94, wherein the step of determining if a gene is associated with the clinical agent includes querying the first data set containing agent-gene associations and determining whether the gene has one or more variants associated with an atypical response to the identified clinical agent.

98. (Previously Presented) The computer-readable medium of claim 97, further comprising the step of initiating an alternative clinical action when the gene has one or more variants associated with an atypical response to the identified clinical agent information.

99. (Previously Presented) The computer-readable medium of claim 98, wherein the alternative clinical action includes at least one of ordering additional tests for the person, automatically canceling one or more previously ordered clinical actions, or generating a message warning of a patient-specific risk.

100. (Previously Presented) The computer-readable medium of claim 94, attempting to obtain a genetic test result value comprises obtaining the genetic test result value from an electronic medical record of the person stored within a comprehensive healthcare system.

101. (Canceled).

102. (Canceled).

103. (Currently Amended) The computer-readable medium of claim [[35]]94, the method further comprising the step of outputting information that the person is not at risk when the genetic test result value does not correlate to a polymorphism value.

104. (New) The computer-readable medium of claim 94, wherein the demographic information comprises a first demographic factor and a second demographic factor, and wherein calculating the likelihood that the person displays a genetic mutation linked to the gene associated with the clinical agent further comprises:

when a first demographic factor about the patient is available in the EMR, determining genetic variability of the gene within the person as a function of the first demographic factor and basing the genetic-mutation likelihood upon the determined genetic variability;

when a second demographic factor about the patient is available in the EMR, determining genetic variability of the gene within the person as a function of the second demographic factor and basing the genetic-mutation likelihood upon the determined genetic variability;

when the first demographic factor and the second demographic factor are both available in the EMR, determining genetic variability of the gene within the person as a function of the first demographic factor and the second demographic factor, and basing the genetic-mutation likelihood upon the determined genetic variability;

when both the first demographic factor and the second demographic factor about the patient are unavailable from the EMR, basing the genetic-mutation likelihood upon the genetic variability of the gene within the general population.